Remarks/Arguments:

The present invention relates to an eye image pickup device for capturing eye images. Specifically, the eye image is degraded and then displayed.

On page 2, the Official Action rejects claims 1-6 and 17-21 under 35 U.S.C. §103(a) as being unpatentable over Oda (U.S. Patent No 6,850,631 B1). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Oda teaches an eye image pickup device. Specifically, Oda teaches the eye image being converted into another geometrical shape.

Applicants' invention as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

> **... degrading an at least iris-containing area in the eye image with a condition of retaining a shape of the iris-containing area and a <u>shape of a pupil</u> in the iris-containing area.**

Claim 1 relates to a process for degrading the displayed eye image while maintaining the correct shape of the iris and the pupil inside the iris. The eye image is degraded so that it cannot be captured and utilized by an unwanted party, but also must maintain the correct shape so that the user is able to recognize their own eye. This feature is found in the originally filed application in Figs. 4-7. No new matter has been added.

In Col. 8, line 65, Oda teaches converting an eye image into another geometrical shape (*"the iris image is converted into a geometrical pattern"*). Col. 8, lines 66-67 of Oda furthermore disclose that the converted geometrical shape is displayed (*"geometrical pattern is ... displayed on the monitor"*). For Example, Figs. 5 and 6 of Oda show the eye image being converted into a geometrical shape. In example (A), iris 7 is fully round and thus converted into a round geometrical shape 55. In example (B), iris 7 is cutoff from the top and bottom and thus is converted into an elliptical geometrical shape 55. Furthermore, example (C) shows iris 7 looking up which is thus converted into a concave down elliptical shape 56. These geometrical patterns are stored in a table in memory as shown in Fig. 6 of Oda. The reason that Oda converts the eye image into a geometrical shape and then displays that geometrical shape, is to let the user be aware of the position of their eye. For example, if the user is shown geometrical pattern 2 in Fig. 6, this indicates that the eye is narrow and that the system needs

the user to open their eyes wider. On page 3, the Official Action states that example (A) of Oda teaches the iris being degraded into a geometrical pattern and the iris shape being retained as a circle. Thus, Oda does teach a particular example wherein the iris containing area shape is retained, however, Oda does not suggest retaining the shape of the pupil (the geometrical shape does not contain a pupil).

Applicants' claim 1 is different than Oda, because the eye image is degraded while maintaining the shape of the iris **and the shape of the pupil in the iris** ("*degrading an at least iris-containing area in the eye image with a condition of retaining a shape of the iris-containing area and* **a shape of a pupil in the iris-containing area**"). For example, Figs. 4-7 of the specification show four different degradation techniques wherein pixel values are altered (Fig. 4 compression, Fig. 5 pixel reduction, Fig. 6. addition of noise and Fig. 7. pixel reduction and compression). These degradation techniques produce pixel altered images that are degraded just enough to prevent the unauthorized use of the image while still **maintaining the shape of the iris and the pupil** (eye image still looks like the users eye).

It is because Applicants include the feature of "*degrading an at least iris-containing area in the eye image with a condition of retaining a shape of the iris-containing area and a* **shape of the pupil in the iris-containing area**", that the following advantages are achieved. An advantage is the ability to securely display the eye image so that it has a natural appearance but is degraded enough to prevent identity theft. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Independent claims 19-21 have been similarly amended to claim 1. Thus, independent claims 19-21 are also patentable over the art of record for the reasons set forth above.

Claims 2-18 and 22 include all the features of claim 1 from which they depend. Thus, claims 2-18 and 22 are also patentable over the art of record for the reasons set forth above.

Claim 23 includes all the features of claim 19 from which it depends. Thus, claim 23 is also patentable over the art of record for the reasons set forth above.

Claim 24 includes all the features of claim 20 from which it depends. Thus, claim 24 is also patentable over the art of record for the reasons set forth above.

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Claim 25 includes all the features of claim 21 from which it depends. Thus, claim 25 is also patentable over the art of record for the reasons set forth above.

Applicants also believe that the Bonneau (US 5,581,6_2_0) reference cited in the Official Action, should be amended to (US 5,581,6_3_0).

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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